



Challenger's Morning Science Segment:

February 26, 2017

Topic: Newton's First Law: Inertia

Build: Raw vs. Boiled Spinning Eggs

Credit<https://www.scienceworld.ca/resources/activities/egg-spinning>

Materials Needed: 1 hard-boiled egg and 1 raw egg (same size and color)

Test your eggs: Begin this experiment by hard-boiling one egg (12 mins.) and then letting it cool. You can begin the experiment when the hard-boiled egg and the raw egg are at the same temperature. Mix up the eggs so you can't tell which one is which. Begin testing to see whether the egg is raw or hard-boiled by spinning one egg on its side. Observe the rotation and take note if there is any "wobbling" during the rotations. Next, with the gentle touch of a finger, try to stop the egg from spinning. Once you release your finger, does the egg stop right away or does it continue to slightly spin? Repeat this testing with the other egg. Note the differences you have observed. Can you guess which egg is the raw egg? Are you confident enough to break the hard-boiled egg over your head?

The science: [<https://www.scienceworld.ca/resources/activities/egg-spinning>]

"A hard-boiled egg is solid whereas a raw egg is fluid. When you spin the raw egg, its center of gravity (or balance point) changes as the fluid inside the egg moves around." This type of movement with the fluid creates that wobbling during the rotation. The hard-boiled egg is solid throughout and thus creates a much more uniform rotation action. Also, the raw egg is harder to stop because of its fluid center. The fluid takes longer to slow down because you have initially only stopped the shell. It demonstrates Newton's First Law because the fluid in motion, inside the egg, remains in motion. It will eventually stop "because of the friction between the hard shell and the table."

Upcoming at the Challenger Learning Center of Maine: Challenger's April Vacation Camp & Summer Camps are open for registration. Apply today! Also, pre-registration is still open for Challenger's 2nd annual 5K Space Race, to be held on March 31, 2018 FMI- www.astronaut.org